REMARKS/ARGUMENTS

In the Office Action dated April 21, 2005, Claims 1-21 are pending. Claims 1-3, 6, 10-15, and 18 are rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 6,244,541 to Hubert. Claims 1-3, 5-8, 10-15, and 17-20 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Hubert in view of U.S. Patent No. 6,523,796 to Abramowsky, et al. Claims 7 and 19 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Hubert in view of U.S. Patent No. 6,416,030 to Bergdahl, et al. Claims 8 and 20 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Hubert in view of U.S. Patent No. 3,243,154 to Dryden. Claims 9 and 21 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Hubert in view of U.S. Patent No. 2,729,443 to Olinger, and additionally under 35 U.S.C. § 103(a) as being unpatentable over Hubert in view of Abramowsky, et al. and further in view of Olinger. Claims 4 and 16 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Hubert in view of Abramowsky, et al. and further in view of U.S. Patent No. 5,884,736 to Burdisso, et al.

Applicant has amended independent Claims 1 and 12 to more clearly point out the subject matter of the present invention. In particular, Claim 1 has been amended to substantially include the features of previous Claim 5, which is cancelled, and to additionally recite that the isolators are elastomeric, a feature of Claim 7. Therefore, Claim 1 now recites a shock isolation system that includes at least two linear bearing assemblies, each assembly linear bearing being configured to move axially on a shaft member such that the first and second devices are configured for relative motion therebetween in the axial direction and the bearing assemblies prevent a rotation between the first and second devices. A plurality of elastomeric isolators are configured to be axially loaded by a relative motion between the first and second devices in the axial direction, and, in particular, "a pair of the isolators extend circumferentially around the shaft member of each linear bearing assembly, the isolators of each pair being positioned opposite the linear bearing of a respective one of the bearing assemblies such that at least one of the isolators of each pair is compressed when the linear bearing of the respective bearing assembly moves axially." Similarly, Claim 12 recites an aerospace vehicle including a boost device, a kill vehicle, and linear bearing assemblies similar to those of Claim 1.

It is respectfully submitted that the cited references, alone or in combination, do not teach or suggest the claimed configuration of linear bearing assemblies. In particular, Hubert does not teach or suggest the use of multiple linear bearing assemblies, each having a shaft with a pair of elastomeric isolators that extend around the shaft on opposite sides of the linear bearing as set forth in Claims 1 and 12. As stated in the Office Action, Hubert does not describe linear assemblies that are linear bearing assemblies as claimed. *See* Office Action, page 4. Indeed, Hubert does teach or suggest any bearing in this regard.

Moreover, regarding the claimed elastomeric isolators, Hubert does not describe any corresponding structure. The Office Action identifies the gaseous fluid chambers $12'_1$ and $12'_2$ as isolators. However, even if the fluid chambers are considered to be isolators, the fluid chambers do not extend "circumferentially around the shaft member" as claimed. Nor are the chambers (or the springs) elastomeric isolators, as claimed. Further, Hubert does not disclose pairs of isolators that are positioned on opposite sides of each linear bearing.

Turning more particularly to the rejections under 35 U.S.C. § 103(a), previous Claims 5 and 17 (the features of which are now included in Claims 1 and 12) stand rejected solely based on the combination of Hubert with Abramowsky, et al. In this regard, the Office Action states that Hubert "does not disclose that the linear assemblies are linear bearing assemblies as claimed," but that it "would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the linear assemblies of Hubert to have been linear bearing assemblies, as taught by Abramowsky et al., in order to provide an alternate and equally effective means of damping movement between the first and second devices." Office Action, pages 3-4. Applicant respectfully disagrees and, more specifically, asserts for the reasons set forth below that Hubert cannot be fairly modified by Abramowsky, et al. as suggested and, even if fairly combined, the references do not render the claims obvious for the following reasons.

Abramowsky, et al. is directed to a "Pivot Mounting Assembly" having a pivot arm that is hinged to a pivot base to be pivotable about a horizontal axis. For example, the pivot mounting assembly can be used in stands to mount lamps, visual display units, and surgical microscopes that are to be vertically adjustable. *See* col. 1, lines 5-12. Thus, unlike the present invention, the mounting assembly of Abramowsky, et al. is specifically directed to the provision

of a pivotable mounting. Therefore, it would not have been obvious to use the configuration of the mounting assembly of Abramowsky, et al. in a device for preventing rotation as claimed. Further, given the field of use of the device disclosed by Abramowsky, et al. (e.g., as a mounting assembly in a stand for mounting a lamp, visual display unit, or surgical microscopes that require vertical adjustment), it would not have been obvious to use the device of Abramowsky, et al. in a shock isolation system as recited in Claim 12 or a device for suspending a payload in a space launch as described by Hubert.

Moreover, even in combination, Hubert and Abramowsky, et al. do not teach or suggest all of the elements of Claims 1 and 12. For example, the references, alone or in combination, do not disclose pairs of elastomeric isolators that extend circumferentially around a shaft on opposite sides of a linear bearing. Indeed, Abramowsky, et al. does not disclose the use of opposing elastomeric isolators, and Hubert specifically teaches away from the use of an "elastomer material to dissipate the energy of shocks" as having the drawbacks "of being costly and difficult to put into practice." Col. 2, lines 28-32.

Accordingly, Applicant respectfully submits that neither of Claims 1 and 12 is anticipated or made obvious by the cited references. Since all of the other claims depend from one of Claim 1 or Claim 12, each of the pending claims should be allowable for the reasons described above.

In addition, Applicant further traverses the rejection of dependent Claims 4 and 16 as being unpatentable over Hubert in view of Abramowsky, et al. and further in view of Burdisso, et al. In addition to the reasons set forth above, Applicant submits that it would not have been obvious to have modified the device of Hubert (as modified by Abramowsky) "to have included balls between the elements 14 and 40 in order to result in an alternate means of providing a low friction interface to facilitate sliding," as stated in the Office Action. Burdisso, et al. describes that the linear bearing **303** is used to restrain the rotation of two reaction masses **302, 307**. *See* col. 4, lines 44-46. However, the linear bearing of Burdisso, et al. is not used for preventing a rotation "about an axis defining the axial direction" as recited in the base Claims 1 and 12. In fact, the feature of using such a linear bearing as set forth in Claims 4 and 16 for the purpose of preventing a rotation about the axial direction is not taught by any of the cited references. Moreover, Applicant respectfully submits that none of the references provides a motivation for

"providing a low friction interface to facilitate sliding" in the device of Hubert. That is, Hubert discloses that the coil springs 22_i can be disposed on the pins 23_i, but there is no indication that friction exists on the pins or that the friction should be reduced to facilitate sliding. In fact, there is no indication that rings 10"", 11"" are subject to relative rotation that the pins must prevent. Indeed, in each of the other embodiments, the pins are not used at all. If the pins are not subjected to friction due to the relative rotation between the rings, it is unclear why a person of ordinary skill in the art would seek to reduce the friction, especially given the express concerns of Hubert for weight and cost. Accordingly, Applicant respectfully submits that Claims 4 and 16 are allowable over the cited references for this additional reason.

For the reasons set forth above, Applicant respectfully submits that each of Claims 1-4, 6-16, and 18-21 is allowable.

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CONCLUSIONS

In view of the remarks presented above, Applicant submits that the present application is in condition for allowance. As such, the issuance of a Notice of Allowance is therefore respectfully requested. In order to expedite the examination of the present application, the Examiner is encouraged to contact Applicant's undersigned attorney in order to resolve any remaining issues.

It is not believed that extensions of time or fees for net addition of claims are required, beyond those that may otherwise be provided for in documents accompanying this paper.

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However, in the event that additional extensions of time are necessary to allow consideration of this paper, such extensions are hereby petitioned under 37 CFR § 1.136(a), and any fee required therefore (including fees for net addition of claims) is hereby authorized to be charged to Deposit Account No. 16-0605.

Respectfully submitted,

Nicholas F. Gallo
Registration No. 50,135

Customer No. 00826
ALSTON & BIRD LLP
Bank of America Plaza
101 South Tryon Street, Suite 4000
Charlotte, NC 28280-4000
Tel Charlotte Office (704) 444-1000
Fax Charlotte Office (704) 444-1111

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Lorna Morehead — June 16, 2005
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